IN THE CLAIMS:

Please amend the claims as follows:

1.   (Original) An image processing apparatus characterized by comprising:

reduced image generation means for generating a reduced image from an input image;

correction information acquisition means for acquiring correction information of the input image based on the reduced image; and

grayscale conversion means for converting grayscale of the input image;

wherein the grayscale conversion means corrects contrast of the input image using the correction information, as a processing to be performed before and/or after the grayscale is converted.

2.   (Original) The image processing apparatus according to claim 1, characterized by further comprising:

smoothing means for generating a smoothed image having luminance L_c of pixels composing the input image smoothed based on interpolation calculation using pixels composing the reduced image,   wherein the grayscale conversion means generate a contrast-corrected image based on luminance L_c of pixels composing the image, luminance L_l of pixels composing the smoothed image, and a predetermined gain value g.

3.   (Original) The image processing apparatus according to claim 1, characterized by further comprising:

smoothing means for generating a smoothed image having luminance L_c of pixels composing the input image smoothed based on interpolation calculation using pixels composing the reduced image; and

gain value setting means for setting a gain value g used for correcting the contrast;

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wherein the grayscale conversion means generate a contrast-corrected image based on luminance L_c of pixels composing the input image, luminance L_l of pixels composing the smoothed image, and a predetermined gain value g; and

the gain value setting means can be configured so as to set the gain value g based on input initial gain value g_0, reference gain value 1, and an attenuation value $attn(Th_1, Th_2, L_c)$ calculated using a first luminance threshold value Th_1, a second luminance threshold value Th_2, and luminance L_c of pixels composing the input image.

4.   (Original) The image processing apparatus according to claim 1, characterized by further comprising:

conversion means for generating a tone-converted image by converting luminance L of pixels composing the input image based on a conversion function;

smoothing means for generating a smoothed image by smoothing luminance L_c of pixels composing the tone-converted image; and

gain value setting means for setting a gain value g used for correcting the contrast based on an initial gain value g_0 which expresses an inverse $1/\gamma$ of a slope γ of the conversion function;

wherein the contrast correction means generate a contrast-corrected image based on luminance L_c of pixels composing the tone-converted image, luminance L_l of pixels composing the smoothed image, and a gain value g; and

the gain value setting means set the gain value g based on input initial gain value g_0, reference gain value 1, and an attenuation value $attn(Th_1, Th_2, L_c)$ calculated using a first luminance threshold value Th_1, a second luminance threshold value Th_2, and luminance L_c of pixels composing the tone-converted image.

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5.	(Original) The image processing apparatus according to claim 1, characterized in that:

the reduced image generation means generate a reduced image by converting the input image into the tone-converted image based on the conversion function and reducing a size of the tone-converted image;

the correction information acquisition means acquire correction information including a slope of the conversion function; and

the grayscale conversion means correct contrast of the tone-converted image based on the reduced image and the slope of the conversion function.

6.	(Canceled)

7.	(New) The image processing apparatus according to claim 5, characterized by further comprising:

hold means for holding the reduced image generated by the reduced image generation means and the correction information acquired by the correction means;

wherein the hold means holds the reduced image corresponding to a previous frame's image and a slope of the conversion function applied to the previous frame's image, and

the grayscale conversion means corrects the contrast of the tone-converted image based on the reduced image of the previous frame and the slope of the conversion function, both stored in the hold means.

8.	(New) An image processing method characterized by comprising:

a reduced image generation step for generating a reduced image from an input image;

a correction information acquisition step for acquiring a correction information of the input image based on the reduced image; and

a grayscale conversion step for converting grayscale of the input image;

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wherein the grayscale conversion step corrects contrast of the input image using the

correction information, as a processing to be performed before and/or after the grayscale is

converted.